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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,975	12/28/2001	Richard H. Crump	NOR-099 (13612BAUS01U)	1741
32836 7590 10/10/2008 GUERIN & RODRIGUEZ, LLP 5 MOUNT ROYAL AVENUE MOUNT ROYAL OFFICE PARK MARLBOROUGH, MA 01752				
EXAMINER NEURAUTER, GEORGE C				
ART UNIT 2443		PAPER NUMBER		
MAIL DATE 10/10/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/040,975

Applicant(s)

CRUMP ET AL.

Examiner

George C. Neurauter, Jr.

Art Unit

2443

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6, 7, 9, 10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 7, 9, 10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF-08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 3-4, 6-7, 9-10, and 12 are currently presented and have been examined.

Response to Arguments

Applicant's arguments filed 5 August 2008 have been fully considered but they are not persuasive.

The Applicant continues to argue that Akahane and the Applicant's admitted prior art fail to teach or suggest the claimed invention. The Examiner respectfully disagrees in view of the teachings of the references.

First, the Examiner notes that the term "address domain" is interpreted by its broadest reasonable interpretation in light of the specification as required by MPEP 2111. The specification discloses that "An example of the address domain includes a virtual private network" (see paragraph 0018 on page 4 of the specification).

As shown in the previous Office Action, Akahane discloses routing packets in a router having a plurality of interfaces through which the packets are received from a plurality of address domains or "VPNs" and having a separate routing table dedicated to each address domain or "VPN" comprising identifying an appropriate routing table for received packets.

Akahane disclosed:

"As described for FIG. 1, the edge router (9) uses "VPI VCI" values as identifiers to identify one VPN to which the LAN1 belongs and another VPN to which the LAN2 belongs. At the same time, the edge router (9) uses a physical interface number as the identifier of the VPN to which the LANS belongs. In the VPN ID indication table that the

edge router (9) holds inside, a "physical interface number" shall be set in the VPN ID entry field for the physical interface (23). In this third embodiment, the edge router (9) internally holds two VPN identification tables; one table that maps "VPI, VCI" values to VPNs and the other table that maps physical interface numbers to VPNS. These tables will be detailed later. For example, if the edge router (9) receives an IP packet sent from the LAN 5 to the LAN4, it determines that physical interface numbers are used as VPN identifiers, according to the setting in the VPN ID indication table. After determining the VPN identifier type, the edge router (9) searches the VPN identification table that maps physical interface numbers to VPNs for a match with the search key of the "physical interface number" across which it received the packet and finds that the IP packet passed across the VPNB. Then, the edge router (9) searches the routing table for VPNB for a match with the search key of the destination IP address of the packet and determines the core router (17) as the next forwarded-to-destination. At this time, the capsule header to be attached to the packet to be sent to the determined core router is determined as well. After this capsule header is attached to the packet, the packet is forwarded to the core router (17). In the third embodiment, different types of VPN identifiers are set for different lower layer protocols and separate VPN identification tables for VPN identifier types are created. In this method, the freedom of one router to cope with different lower layer protocols is increased. Specifically, the procedure according to this embodiment is as follows. When setting up the edge router to interconnect VPNs that use different lower layer protocols, register VPN identifier types proper to the lower layer protocols into the VPN ID indication table. Register discrete

VPN identifiers into VPN identification tables separately created for VPN identifier types. In this way, the edge router can be set up to interconnect VPNs, coping with various kinds of lower layer protocols that are different for different VPNS." (column 6, line 49-column 7, line 25)

" FIG. 8 shows example contents of a routing table (152) for VPN. The VPN identification table /routing table look-up processor (102) holds separate routing tables (152) for the VPNs interconnected by the router. These routing tables (152) separately created for the VPNs may be stored into a single storage device or different storage devices. Any routing table (152) for VPN contains the entries of destination IP address (300), output route number (301), and output capsule header information (302). The output route number (301) is the intra-router identifier of a route across which the switch forwards the packet to a predetermined interface." (column 10, lines 11-21)

As shown by these disclosures within Akahane, Akahane clearly disclosed that a router has a plurality of interfaces associated with a plurality of address domains having their own separate routing table in the router at least through Akahane's express disclosure that "the edge router can be set up to interconnect VPNs, coping with various kinds of lower layer protocols that are different for different VPNS". Therefore, each interface is considered to be to receive packets for a separate address domain or "VPN" wherein each VPN may have a different lower layer protocol which receives these packets. Further, Akahane disclosed identifying an appropriate routing table for received packets by use of the VPN identifiers as shown above.

Further, the disclosures of the Applicant's admitted prior art are used to show that the use of a single IP stack to receive these packets is conventional as admitted by the Applicant in the disclosure, which the Applicant concurred with in the current response. Therefore, when combined with the teachings of Akahane which clearly disclose the use of IP packets, the combined teachings of the references resolve the gap of the teaching of a single IP stack in Akahane and show that the use of such a single IP stack would have been conventional and recognized by those of ordinary skill.

Therefore, the combined teachings of Akahane and the Applicant's admitted prior art continue to render the claimed invention unpatentable and the claims are not in condition for allowance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-4, 6-7, 9-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2001/0050914 over Akahane et al in view of Applicant's admitted prior art.

Regarding claim 1, Akahane discloses routing packets in a router having a plurality of interfaces through which the packets are received from a plurality of address domains and having a separate routing table in the router dedicated to each address domain comprising identifying an appropriate routing table for received packets (paragraphs 0006 and 0007; see also paragraph 0016).

Akahane does not expressly disclose executing a single IP stack to receive packets from any of the router, however, Akahane does disclose determining the one routing table by a router that contains means for receiving and processing IP packets and identifying an appropriate routing table for received packets as shown above (see also paragraphs 0006, 0012, and 0039).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Akahane and Applicant's admitted prior art to execute a single IP stack to receive packets from any of the router interfaces and to identify an appropriate routing table for received packets since the Applicant has admitted that execute a single IP stack to receive packets from any of the router interfaces and perform other router-executable processes is well known in the prior art (see paragraph 0003 within the specification) and, therefore, one of ordinary skill in the art would have found it obvious to modify the teachings of Akahane since it would have been within the level of knowledge of one of ordinary skill in the art at the time the

invention was made to use a single IP stack to perform these processes as admitted by the Applicant and disclosed within the teachings of Akahane.

Regarding claim 3, Akahane and Applicant's admitted prior art disclose the method of claim 1.

Akahane discloses wherein a mapping array associates interfaces connecting to the same address domain with the same routing table. (paragraphs 0006 and 0007; see also paragraph 0016)

Regarding claim 4, Akahane and Applicant's admitted prior art disclose the method of claim 1.

Akahane does not expressly disclose wherein executing a single IP stack forwards a received packet according to the identified routing table when the received packet is a data packet and updates the identified routing table when the received packet is a control packet, however, Akahane does disclose determining the one routing table by a router that contains means for receiving and processing IP packets as shown above (see also paragraphs 0006, 0012, and 0039).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Akahane and Applicant's admitted prior art to forward a received packet according to the identified routing table when the received packet is a data packet and update the identified routing table when the received packet is a control packet by a single IP stack since the Applicant has admitted that doing so is well known in the prior art for making necessary updates to a routing table when network topology changes (paragraphs 0003 and 0004) and, therefore, one

of ordinary skill in the art would have found it obvious to modify the teachings of Akahane to include this subject matter in order to achieve the advantages as admitted by the Applicant and it would have been within the level of knowledge of one of ordinary skill in the art at the time the invention was made.

Regarding claim 6, Akahane and Applicant's admitted prior art disclose the method of claim 1.

Akahane discloses wherein each of the plurality of address domains represents a virtual private network. (paragraph 0006, specifically "Private IP addresses are often used in intra-corporation networks...private IP address are used in the VPNs...")

Claims 7, 9-10, and 12 are also rejected since these claims recite a router that contain substantially the same limitations as recited in claims 1, 3-4, and 6 respectively.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Neurauter, Jr. whose telephone number is (571)272-3918. The examiner can normally be reached on the hours between 8:30am-5:00pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger, can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George C. Neurauter, Jr./
Primary Examiner, Art Unit 2443